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Wei Wei Jeang
Haynes and Boone, LLP
901 Main Street
Suite 3100
Dallas, TX 75202

EXAMINER	
HAROLD, JEFFEREY F	

ART UNIT	PAPER NUMBER
2644	

DATE MAILED: 12/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/992,217	HAUN ET AL.	
	Examiner	Art Unit	
	Jefferey F Harold	2644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 August 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Supplemental Action

1. The office action mailed November 17, 2004, has been replaced in its entirety by the following action.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. ***Claims 1, 2, 5, 7-9, 12, 13 and 21*** are rejected under 35 U.S.C. 102(b) as being anticipated by Rasmusson et al. (United States Patent 5,835,851), hereinafter referenced as Rasmusson.

Regarding **claim 1**, Rasmusson discloses a method and apparatus for echo reduction in a hands-free cellular radio using added noise frames. In addition, Rasmusson discloses an acoustic echo processor (102) for variably attenuating acoustic signals in a cellular radio communication system, which reads on the claimed "telephony switching method", as disclosed at column 3, lines 23-25; lines 51-53 and column 5, lines 21-23 and exhibited in figures 1 and 2, wherein the variable attenuators (203 and 212) perform the function of switching by variably attenuating the acoustic signals, comprising:

receiving downlink speech frames from land line telephone (105), which reads on the claimed "receiving data from a first part/", as disclosed at column 4, lines 23-25; 33-36 and exhibited in figures 1 and 2, wherein the speech frames read on the "data" and the land line phone reads on the "first party";

downlink speech detector (207) analyzes downlink speech frames and provides indication of the presence or absence of human speech in the speech frames from the land line telephone (105), as disclosed at column 4, lines 24-27 and exhibited in figure 3, which reads on the claimed "determining whether the data from the first party is substantially all speech data", wherein the downlink speech detector analyzing reads on the step of "determining whether the data is substantially all speech data"; when human speech is detected by the downlink speech detector (207), which reads on the claimed "in response to the data from the first party being substantially all speech data", as disclosed at column 5, lines 64-65;

the decision process begins at state SOAB with both uplink and downlink paths open, thus when the downlink path is open, the landline user may speak into landline telephone (105) and be heard by the cellular user at speaker (104), which reads on claimed "sending data from the first party to the speaker", as disclosed at column 4, lines 39-41; column 5, lines 28-30 and exhibited in figures 1, 2 and 4; wherein the landline user reads on "the first party" and speaking reads on "sending the data";

attenuating the uplink path by enabling the variable attenuator (203) which silences the microphone (101) which is operable to receive speech data from the user of the cellular radio telephone (100) and receive speech data output by the speaker (104), which reads on the claimed "deactivating a data transfer state by preventing a transfer of the data captured by a microphone operable to receive data from a second party and to receive data output by a speaker", as disclosed at column 4, lines 48-49, column 5, lines 65-67 and column 6, lines 7-8, and exhibited in figures 1, 2 and 4;

wherein attenuating reads on the step of "deactivating"', wherein the user of the cellular radio telephone (100) reads on the second party;

downlink speech detector (207) provides indication to decision block (206) indicating that no speech is present in the downlink path thus the state machine reverts from step S1OB to SOAB, i.e. start position with both uplink and downlink paths open, where no speech is detected by either the uplink or downlink speech detector, which reads on the claimed "in response to the data from the first party not being substantially all speech data, then determining whether a silent data threshold has been reached", as exhibited in figure 4, specifically state machine states SIOB through SOAB, wherein the downlink detector providing indication of no speech present in the downlink path reads on "data from first party not being substantially all speech" and state machine state SOAB reads on "silent data threshold";

at state SOAB, the uplink path is open and the user of the cellular radiotelephone (100) may speak into microphone (101), which reads on claimed "if silent data threshold has been reached, activating the data transfer state and recording data from the second party", as disclosed at column 5, lines 27-29; column 4, lines 36-41 and exhibited in figure 4; wherein state SOAB reads on the "silent data threshold" and uplink path being open reads on the set of "activating the data transfer state";

when the uplink path is open speech data from the user of the cellular radiotelephone user (100) is transmitted and heard by the other party at landline telephone (105), which reads on the claimed "if the data transfer state has been activated, sending the data from the second party to the first party", as disclosed at

column 4, line 36-38, where the user of the cellular radiotelephone user reads on the "second party".

Regarding **claim 2**, Rasmusson discloses everything claimed as applied above (see claim 1), in addition Rasmusson discloses A/D (200) and D/A (210) converters for decoding data from the user of the line telephone (105), which reads on claimed "decoding the data from the first party", as disclosed at column 3, lines 55-57 and exhibited in figure 2; wherein A/D and D/A converters read on "decoding" since data received via the downlink path from the user of the landline telephone is decoded and output through speaker (104).

Regarding **claim 5**, Rasmusson discloses everything claimed as applied above (see claim 1), in addition Rasmusson discloses wherein the data comprises audio data, since the data received from the user of the landline telephone (105) user is speech data, as exhibited in figures 1 and 2.

Regarding **claim 7**, Rasmusson discloses everything claimed as applied above (see claim 1), in addition Rasmusson discloses downlink speech detector (207) analyzes downlink speech frames and provides indication of the presence or absence of human speech in the speech frames from the landline telephone (105), to decision logic (206), wherein the decision logic resides within the acoustic echo reduction processor (102) of the cellular radiotelephone (100) that is inherently a computer, which reads on the claimed "determining whether the data from the first party is substantially all speech data using logic residing on a computer", as disclosed at column 4, lines 24-27 and exhibited in figure 3, wherein downlink speech detector analyzing reads on step of

"determining whether the data is substantially all speech data", decision logic (206) reads on "logic" and cellular radiotelephone (100) reads on the "computer" as it is recognized by one of ordinary skill in the art that a computer is a programmable electronic device that can store; retrieve and process data, thus the cellular radiotelephone is a computer;

downlink speech detector (207) and uplink speech detector (202) provide indication to decision block (206) indicating the presence of speech in the downlink and uplink paths thus if no speech is present the state machine reverts SOAB, i.e. start position with both uplink and downlink paths open, which reads on the claimed "in response to the data from the first party not being substantially all speech data, then determining whether a silent data threshold has been reached", as disclosed at figure 4, specifically state SOAB, wherein the downlink detector providing indication of no speech present in the downlink path reads on "data from first party not being substantially all speech" and state machine state SOAB reads on "silent data threshold";

where microphone (101) and speaker (104) are operatively associated with the cellular radiotelephone (100), as exhibited in figures 1 and 2.

Regarding **claim 8**, Rasmusson discloses an acoustic echo processor (102), which reads on the claimed "telephony switching system", as disclosed at column 3, lines 23-25; lines 51-53 and column 5, lines 21-23 and exhibited in figures 1 and 2, comprising:

speaker (104) operable to output downlink speech frames from land line telephone (105), as disclosed at column 4, lines 38-41 and exhibited in figures 1 and 2,

which reads on the claimed "a speaker operable to output data received from a first party', wherein the speech frames reads on the "data" and the landline phone reads on the "first party";

a microphone (101) operable to transmit via the uplink, speech frames from the user of the cellular radio telephone (100) and inherently receive speech data input from the speaker (104), as it is recognized by one of ordinary skill in the art that a communication device attached to the end of the transmission path receives data from the far end via a speaker and the data is transmitted to the far end via a microphone, further in such a device there exists a echo path where portions of the output of the speaker is received by near end microphone, thus the near end microphone receives data input from the speaker, as disclosed at column 4, lines 36-38 and exhibited in figures 1 and 2; wherein the user of the cellular radiotelephone (100) reads on the "second party".

decision logic (206) coupled to the microphone (101) and to the speaker (104) and operable to receive data via the downlink path from the land line phone (105), which reads on the claimed "logic module coupled to the microphone and to the speaker and operable to receive the data from the first party, as exhibited in figures 1 and 2;

downlink speech detector (207) analyzes downlink speech frames and provides indication of the presence or absence of human speech in the speech frames from the landline telephone (105), as disclosed at column 4, lines 24-27 and exhibited in figure 3, which reads on the claimed "determining whether the data from the first party is

substantially all speech data", wherein downlink speech detector analyzing reads on step of "determining whether the data is substantially all speech data";

when human speech is detected by the downlink speech detector (207), which reads on the claimed "in response to the data from the first party being substantially all speech data", as disclosed at column 5, lines 64-65;

the decision process begins at state SOAB with both uplink and downlink paths open, thus when the downlink path is open, the landline user may speak into landline telephone (105) and be heard by the cellular user at speaker (104), which reads on claimed "send the audio data from the first party to the speaker", as disclosed at column 4, lines 39-41; column 5, lines 28-30 and exhibited in figures 1, 2 and 4; wherein the landline user reads on "the first party" and speaking reads on "send the audio data" attenuating the uplink path by enabling the variable attenuator (203) which silences the microphone (101) which is operable to receive speech data from the user of the cellular radio telephone (100) and receive speech data output by the speaker (104), which reads on the claimed "deactivating a data transfer state by preventing transfer of the data captured by the microphone", as disclosed at column 4, lines 48-49, column 5, lines 65-67 and column 6, lines 7-8, and exhibited in figures 1, 2 and 4; wherein attenuating reads on "deactivate";

downlink speech detector (207) provides indication to decision block (206) indicating that no speech is present in the downlink path thus the state machine reverts from step S1OB to SOAB, i.e. start position with both uplink and downlink paths open, where no speech is detected by either the uplink or downlink speech detector, which

reads on the claimed "in response to the data from the first party not being substantially all speech data, then determine whether a silent data threshold has been reached", as disclosed at figure 4, specifically state machine states S1OB through SOAB, wherein the downlink detector providing indication of no speech present in the downlink path reads on "data from first party not being substantially all speech" and state machine state SOAB reads on "silent data threshold" at state SOAB, the uplink path is open and the user of the cellular radiotelephone (100) may speak into microphone (101), which reads on claimed "if silent data threshold has been reached, activating the data transfer state and record data from the second party", as disclosed at column 5, lines 27-29*, column 4, lines 36-41 and exhibited in figure 4; wherein state SOAB reads on the "silent data threshold" and uplink path being open reads on the set of "activating the data transfer state";

when the uplink path is open speech data from the user of the cellular radiotelephone user (100) is transmitted and heard by the other party at landline telephone (105), which reads on the claimed "if the data transfer state has been activated, send the data from the second party to the first party", as disclosed at column 4, line 36-38, where the user of the cellular radiotelephone user reads on the "second party"

Regarding **claim 9**, Rasmusson discloses everything claimed as applied above (see claim 8), in addition Rasmusson discloses A/D (200) and D/A (210) converters for decoding data from the user of the line telephone (105), which reads on claimed

"decoding the data from the first party", as disclosed at column 3, lines 55-57 and exhibited in figure 2; wherein A/D and D/A converters read on "decoding" since data received via the downlink path from the user of the landline telephone is decoded and output through speaker (104).

Regarding **claim 12**, Rasmusson discloses everything claimed as applied above (see claim 8), in addition Rasmusson discloses wherein the data comprises audio data, since the data received from the user of the landline telephone (105) user is speech data, as exhibited in figure 2.

Regarding **claim 13**, Rasmusson discloses everything claimed as applied above (see claim 8), in addition Ramusson discloses wherein the microphone (101) resides on a cellular radiotelephone (100), which reads on the claimed "wherein the microphone resides on a wireless device" as disclosed in figures 1 and 2, wherein the cellular radiotelephone reads on "wireless device".

Regarding **claim 21**, Rasmusson discloses an acoustic echo processor (102), which reads on claimed "telephony switching system", as disclosed at column 3, lines 23-25; lines 51-53 and column 5, lines 21-23 and exhibited in figures 1 and 2, comprising:

speaker (104) operably associated with cellular radiotelephone (100) and operable to output downlink speech frames from landline telephone (105), as disclosed at column 4, lines 38-41 and exhibited in figures 1 and 2, which reads on the claimed "a speaker operably associated with a computer and operable to output data received from a first party", wherein the speech frames reads on the "data" and the landline phone

reads on the "first party" wherein cellular radiotelephone (100) reads on the "computer", as it is recognized by one of ordinary skill in the art that a computer is a programmable electronic device that can store; retrieve and process data, thus the cellular radiotelephone is a computer;

a microphone (101) operably associated with the computer and operable to transmit via the uplink, speech frames from the user of the cellular radio telephone (100) and inherently receive speech data input from the speaker (104), as it is recognized by one of ordinary skill in the art that a communication device attached to the end of the transmission path receives data from the far end via a speaker and the data is transmitted to the far end via a microphone, further in such a device there exist a echo path where portions of the output of the speaker is received by near end microphone, thus the near end microphone receives data input from the speaker, as disclosed at column 4, lines 36-38 and exhibited in figures 1 and 2; wherein the user of the cellular radiotelephone (100) reads on the "second party".

decision logic (206) residing on the computer and coupled to the microphone (101) and to the speaker (104) and operable to receive data via the downlink path from the landline phone (105), which reads on the claimed "logic module coupled to the microphone and to the speaker and operable to receive the data from the first party, as exhibited in figures 1 and 2;

downlink speech detector (207) analyzes downlink speech frames and provides indication of the presence or absence of human speech in the speech frames from the land line telephone (105), as disclosed at column 4, lines 24-27 and exhibited in figure

3, which reads on the claimed "determining whether the data from the first party is substantially all speech data", wherein downlink speech detector analyzing reads on step of "determining whether the data is substantially all speech data";

when human speech is detected by the downlink speech detector (207), which reads on the claimed "in response to the data from the first party being substantially all speech data", as disclosed at column 5, lines 44-64;

the decision process begins at state SOAB with both uplink and downlink paths open, thus when the downlink path is open, the landline user may speak into landline telephone (105) and be heard by the cellular user at speaker (104), which reads on claimed "send the audio data from the first party to the speaker", as disclosed at column 4, lines 39-41; column 5, lines 28-30 and exhibited in figures 1, 2 and 4; wherein the landline user reads on "the first party" and speaking reads on "'send the audio data";

attenuating the uplink path by enabling the variable attenuator (203) which silences the microphone (101) which is operable to receive speech data from the user of the cellular radio telephone (100) and receive speech data output by the speaker (104), which reads on the claimed "deactivating a data transfer state by preventing transfer of the data captured by the microphone", as disclosed at column 4, lines 48-49, column 5, lines 65-67 and column 6, lines 7-8, and exhibited in figures 1, 2 and 4; wherein attenuating reads on "deactivate";

downlink speech detector (207) provides indication to decision block (206) indicating that no speech is present in the downlink path thus the state machine reverts from step S1OB to SOAB, i.e. start position with both uplink and downlink paths open,

where no speech is detected by either the uplink or downlink speech detector, which reads on the claimed "in response to the data from the first party not being substantially all speech data, then determine whether a silent data threshold has been reached", as disclosed at figure 4, specifically state machine states S1OB through SOAB, wherein the downlink detector providing indication of no speech present in the downlink path reads on "data from first party not being substantially all speech" and state machine state SOAB reads on "silent data threshold";

at state SOAB, the uplink path is open and the user of the cellular radiotelephone (100) may speak into microphone (101), which reads on claimed "if silent data threshold has been reached, activating the data transfer state and record data from the second party", as disclosed at column 5, lines 27-29; column 4, lines 36-41 and exhibited in figure 4; wherein state SOAB reads on the "silent data threshold" and uplink path being open reads on the set of "activating the data transfer state";

when the uplink path is open speech data from the user of the cellular radiotelephone user (100) is transmitted and heard by the other party at landline telephone (105), which reads on the claimed "if the data transfer state has been activated, send the data from the second party to the first party", as disclosed at column 4, line 36-38, where the user of the cellular radiotelephone user reads on the "second party".

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. ***Claims 3, 4, 10 and 11*** are rejected under 35 U.S.C. 103(a) as being unpatentable over Rasmusson in view of Bridges (United States Patent 5,978,763).

Regarding **claim 3**, Rasmusson discloses everything claimed as applied above (see claim 1), in addition Rasmusson discloses wherein the downlink speech detector determines the presence or absence of speech data, wherein presence of speech data reads on the claimed "all speech data", however, Rasmusson fails to disclose wherein substantially all speech data comprises a dynamically adjustable amount of the data from the first party that is in a speech range. However, the examiner maintains that it was well known in the art to provide wherein substantially all speech data comprises a dynamically adjustable amount of the data from the first party that is in a speech range, as taught by Bridges.

In a similar field of endeavor Bridges discloses voice activity detection using echo return loss to adapt the detection threshold. In addition, Bridges discloses the incoming signal/echo (261) which reads on the claimed "data", as disclosed at column 5, lines 4-8 and exhibited in figure 2., the echo return loss of the signal in the transmission path (8 and 10) determines the threshold used by the comparator (268) to determine if the incoming signal/echo is deemed to include direct speech, which reads on the claimed "a

dynamically adjustable amount of data from the first party that is in a speech range", as disclosed at column 5, line 44 through column 6, line 13 and exhibited in figure 2; wherein the process of using the echo return loss which varies reads on "dynamically adjustable".

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Rasmusson by specifically providing wherein substantially all speech data comprises a dynamically adjustable amount of the data from the first party that is in a speech range employing object-oriented software, taught by Bridges, for the purpose of reducing the occurrence of false speech detection.

Regarding **claim 4**, the Rasmusson and Bridges disclose everything claimed as applied above (see claim 3), however, Rasmusson fails to disclose wherein the speech range is adjustable. However, the examiner maintains that it was well known in the art to provide wherein the speech range is adjustable, as taught by Bridges.

In addition, Bridges discloses wherein detection of the speech signal is based on a comparison to the threshold. The threshold for the comparator is adjustable thus the range of speech detected is based on the threshold and consequently the resultant the speech range is adjustable, as disclosed at column 5, line 44 through column 6, line 13 and exhibited in figure 2.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Rasmusson by specifically providing wherein the speech range is adjustable, taught by Bridges, for the purpose of reducing the occurrence of false speech detection.

Regarding **claim 10**, Rasmusson discloses everything claimed as applied above (see claim 8), in addition Rasmusson discloses wherein the downlink speech detector determines the presence or absence of speech data, wherein presence of speech data reads on the claimed "all speech data", however, Rasmusson fails to disclose wherein substantially all speech data comprises a dynamically adjustable amount of the audio data from the first party that is in a speech range. However, the examiner maintains that it was well known in the art to provide wherein substantially all speech data comprises a dynamically adjustable amount of the audio data from the first party that is in a speech range, as taught by Bridges.

In a similar field of endeavor Bridges discloses voice activity detection using echo return loss to adapt the detection threshold. In addition, Bridges discloses wherein the incoming signal/echo (261) which reads on the claimed "data" as disclosed at column 5, lines 4-8 and exhibited in figure 2: the echo return loss of the signal in the transmission path (8 and 10) determines the threshold used by the comparator (268) to determine if the incoming signal/echo is deemed to include direct speech, which reads on the claimed "a dynamically adjustable amount of data from the first party that is in a speech range", as disclosed at column 5, line 44 through column 6, line 13 and exhibited in figure 2; wherein the process of using the echo return loss which varies reads on "dynamically adjustable".

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Rasmusson by specifically providing wherein substantially all speech data comprises a dynamically adjustable amount of the speech

data from the first party that is in a speech range employing object-oriented software, taught by Bridges, for the purpose of reducing the occurrence of false speech detection.

Regarding **claim 11**, the Rasmusson and Bridges disclose everything claimed as applied above (see claim 10), however, Rasmusson fails to disclose wherein the speech range is adjustable. However, the examiner maintains that it was well known in the art to provide wherein the speech range is adjustable, as taught by Bridges.

In addition, Bridges discloses wherein detection of the speech signal is based on a comparison to the threshold. The threshold for the comparator is adjustable thus the range of speech detected is based on the threshold and consequently the resultant the speech range is adjustable, as disclosed at column 5, line 44 through column 6, line 13 and exhibited in figure 2.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Rasmusson by specifically providing wherein the speech range is adjustable, taught by Bridges, for the purpose of reducing the occurrence of false speech detection.

4. ***Claims 6, 14, 15, and 18-20*** are rejected under 35 U.S.C. 103(a) as being unpatentable over Rasmusson in view of Marchok et al. (United States Patent 6,526,140), hereinafter referenced as Marchock.

Regarding **claim 6**, Rasmusson discloses everything claimed as applied above (see claim 1), in addition Rasmusson discloses wherein cellular radiotelephone (100) is a computer, as it is recognized by one of ordinary skill in the art that a computer is a

programmable electronic device that can store; retrieve and process data, thus the cellular radiotelephone is a computer', further inherent to computers are operating instructions for performing processing, storing, and retrieval of data, however, Rasmusson fails to disclose employing object-oriented software instructions. However, the examiner maintains that it was well known in the art to provide employing object-oriented software instructions, as taught by Marchock.

In a similar field of endeavor Marchock discloses voice activity detection and noise estimation. In addition, Marchock discloses a consolidated multifunctional voice activity detector that can be implemented in hardware, software, or a combination of hardware and software. Further some aspects of the system can be implemented in computer programs executing on programmable computers. Each program can be implemented in a object-oriented programming language to communicate with a computer system, which reads on claimed "employing object-oriented software instruction", as disclosed at column 3, line 63 through column 4, line 6.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Rasmusson by specifically providing employing object-oriented software, as taught by Marchock, for the purpose of improved voice performance with less processing.

Regarding **claim 14**, Rasmusson discloses an acoustic echo processor (102), which reads on claimed "telephony switching system", as disclosed at column 3, lines 23-25; lines 51-53 and column 5, lines 21-23 and exhibited in figures 1 and 2, comprising:

an acoustic echo reduction processor (102), which reads on the claimed "a computer readable medium", as exhibited in figures 1 and 2;

receiving downlink speech frames from land line telephone (105), which reads on the claimed "receiving data from a first party", as disclosed at column 4, lines 23-25; 33-36 and exhibited in figures 1 and 2, wherein the speech frames reads on the "data" and the land line phone reads on the "first party",

downlink speech detector (207) analyzes downlink speech frames and provides indication of the presence or absence of human speech in the speech frames from the land line telephone (105), as disclosed at column 4, lines 24-27 and exhibited in figure 3, which reads on the claimed "determining whether the data from the first party is substantially all speech data", wherein downlink speech detector analyzing reads on step of "determining whether the data is substantially all speech data";

when human speech is detected by the downlink speech detector (207), which reads on the claimed "in response to the data from the first party being substantially all speech data", as disclosed at column 5, lines 64-65;

the decision process begins at state SOAB with both uplink and downlink paths open, thus when the downlink path is open, the landline user may speak into landline telephone (105) and be heard by the cellular user at speaker (104), which reads on claimed "sending data from the first party to the speaker", as disclosed at column 4, lines 39-41; column 5, lines 28-30 and exhibited in figures 1, 2 and 4; wherein the landline user reads on "the first party" and speaking reads on "sending the data";

attenuating the uplink path by enabling the variable attenuator (203) which silences the microphone (101) which is operable to receive speech data from the user of the cellular radio telephone (100) and receive speech data output by the speaker (104), which reads on the claimed "deactivating a data transfer state by preventing a transfer of the data captured by a microphone operable to receive data from a second party and to receive data output by a speaker", as disclosed at column 4, lines 48-49, column 5, lines 65-67 and column 6, lines 7-8, and exhibited in figures 1, 2 and 4, wherein attenuating reads on the step of "deactivating";

downlink speech detector (207) provides indication to decision block (206) indicating that no speech is present in the downlink path thus the state machine reverts from step S1OB to SOAB, i.e. start position with both uplink and downlink paths open, where no speech is detected by either the uplink or downlink speech detector, which reads on the claimed "in response to the data from the first party not being substantially all speech data, then determining whether a silent data threshold has been reached", as disclosed at figure 4, specifically state machine states S1OB through SOAB, wherein the downlink detector providing indication of no speech present in the downlink path reads on "data from first party not being substantially all speech" and state machine state SOAB reads on "silent data threshold";

at state SOAB, the uplink path is open and the user of the cellular radiotelephone (100) may speak into microphone (101), which reads on claimed "if silent data threshold has been reached, activating the data transfer state and recording data from the second party", as disclosed at column 5, lines 27-29; column 4, lines 36-41 and exhibited in

figure 4; wherein state SOAB reads on the "silent data threshold" and uplink path being open reads on the set of "activating the data transfer state";

when the uplink path is open speech data from the user of the cellular radiotelephone user (100) is transmitted and heard by the other party at landline telephone (105), which reads on the claimed "if the data transfer state has been activated, sending the data from the second party to the first party", as disclosed at column 4, line 36-38, where the user of the cellular radiotelephone user reads on the "second party", however, Rasmusson fails to disclose employing object-oriented software instructions. However, the examiner maintains that it was well known in the art to provide employing object-oriented software instructions, as taught by Marchock.

In addition, Marchock discloses a consolidated multifunctional voice activity detector that can be implemented in hardware, software, or a combination of hardware and software. Further some aspects of the system can e implemented in computer programs executing on programmable computers. Each program can be implemented in a object-oriented programming language to communicate with a computer system, which reads on claimed "employing object-oriented software instruction", as disclosed at column 3, line 63 through column 4, line 6.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Rasmusson by specifically providing employing object-oriented software, as taught by Marchock, for the purpose of improved voice performance with less processing.

Regarding **claim 15**, Rasmusson and Marchock disclose everything claimed as applied above, (see claim 14), in addition Ramusson discloses A/D (200) and D/A (210) converters for decoding data from the user of the line telephone (105), which reads on claimed "decode the data from the first party", as disclosed at column 3, lines 55-57 and exhibited in figure 2., wherein A/D and D/A converters read on "decoding" since data received via the downlink path from the user of the landline telephone is decoded and output through speaker (104), however, Rasmusson fails to disclose wherein the application software is further operable to decode the data from the first party. However, the examiner maintains that it was well known in the art to provide employing object-oriented software instructions, as taught by Marchock.

In addition, Marchock discloses a consolidated multifunctional voice activity detector that can be implemented in hardware, software, or a combination of hardware and software. Further some aspects of the system can be implemented in computer programs executing on programmable computers. Each program can be implemented in an object-oriented programming language to communicate with a computer system, and wherein the application software is further operable to decode the data from the first party which reads on claimed "wherein the application software if further operable to decode the data from the first party", as disclosed at column 4, lines 4-28; column 5, lines 1-4 and exhibited in figure 3.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Rasmusson by specifically providing wherein the

application software is further operable to decode the data from the first party, as taught by Marchock, for the purpose of improved voice performance with less processing.

Regarding **claim 18**, Rasmusson and Marchock disclose everything claimed as applied above (see claim 14), in addition Rasmusson discloses wherein the data comprises audio data, since the data received from the user of the landline telephone (105) user is speech data.

Regarding **claim 19**, Rasmusson and Marchock disclose everything claimed as applied above (see claim 14), in addition, Rasmusson discloses downlink speech detector (207) provides indication to decision block (206) indicating that no speech is present in the downlink path thus the state machine reverts from step S1OB to SOAB, i.e. start position with both uplink and downlink paths open, where no speech is detected by either the uplink or downlink speech detector, which reads on the claimed "in response to the data from the first party not being substantially all speech data, then determining whether a silent data threshold has been reached", as disclosed at figure 4, specifically state machine states SIOB through SOAB, wherein the downlink detector providing indication of no speech present in the downlink path reads on "data from first party not being substantially all speech" and state machine state SOAB reads on "silent data threshold";

at state SOAB, the uplink path is open and the user of the cellular radiotelephone (100) may speak into microphone (101), which reads on claimed "if silent data threshold has been reached", as disclosed at column 5, lines 27-29', column 4, lines 36-41 and exhibited in figure 4', wherein state SOAB reads on the "silent data threshold", however,

Rasmusson fails to disclose wherein the application software is operable to perform the steps. However, the examiner maintains that it was well known in the art to provide wherein the application software is operable to perform the steps, as taught by Marchock.

In addition, Marchock discloses a consolidated multifunctional voice activity detector that can be implemented in hardware, software, or a combination of hardware and software. Further some aspects of the system can e implemented in computer programs executing on programmable computers. Each program can be implemented in a object-oriented programming language to communicate with a computer system, which reads on claimed "wherein the application software is operable to perform the steps", as disclosed at column 3, line 63 through column 4, line 6.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Rasmusson by specifically providing wherein the application software is operable to perform the steps, as taught by Marchock, for the purpose of improved voice performance with less processing.

Regarding **claim 20**, Rasmusson and Marchock disclose everything claimed as applied above (see claim 14), in addition Rasmusson discloses wherein the acoustic echo reduction processor (102), which reads on the claimed "computer readable medium" is operably associated with the cellular radiotelephone (100), where microphone (101) and speaker (104) are operatively associated with the cellular radiotelephone (100), as exhibited in figures 1 and 2, wherein cellular radiotelephone (100) reads on the "computer", as it is recognized by one of ordinary skill in the ad that

a computer is a programmable electronic device that can store; retrieve and process data, thus the cellular radiotelephone is a computer.

5. ***Claims 16 and 17*** are rejected under 35 U.S.C. 103(a) as being unpatentable over Rasmusson in view of Marchok and further in view of Bridges.

Regarding **claim 16**, Rasmusson and Marchok disclose everything claimed as disclosed above (see claim 14), in addition Rasmusson discloses wherein the downlink speech detector determines the presence or absence of speech data, wherein presence of speech data reads on the claimed "all speech data", however, Rasmusson and Marchock fails to disclose wherein substantially all speech data comprises a dynamically adjustable amount of the data from the first party that is in a speech range. However, the examiner maintains that it was well known in the ad to provide wherein substantially all speech data comprises a dynamically adjustable amount of the data from the first party that is in a speech range, as taught by Bridges.

In addition, Bridges discloses wherein the incoming signal/echo (261) which reads on the claimed "data", as disclosed at column 5, lines 4-8 and exhibited in figure 2; the echo return loss of the signal in the transmission path (8 and 10) determines the threshold used by the comparator (268) to determine if the incoming signal/echo is deemed to include direct speech, which reads on the claimed "a dynamically adjustable amount of data from the first party that is in a speech range", as disclosed at column 5, line 44 through column 6, line 13 and exhibited in figure 2; wherein the process of using the echo return loss which varies reads on "dynamically adjustable".

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Rasmusson and Marchock by specifically providing wherein substantially all speech data comprises a dynamically adjustable amount of the data from the first party that is in a speech range employing object-oriented software, taught by Bridges, for the purpose of reducing the occurrence of false speech detection.

Regarding **claim 17**, the Rasmusson and Marchock disclose everything claimed as applied above (see claim 16), however, Rasmusson and Marchock fails to disclose wherein the speech range is adjustable. However, the examiner maintains that it was well known in the ad to provide wherein the speech range is adjustable, as taught by Bridges.

In addition, Bridges discloses wherein detection of the speech signal is based on a comparison to the threshold. The threshold for the comparator is adjustable thus the range of speech detected is based on the threshold and consequently the resultant the speech range is adjustable, as disclosed at column 5, line 44 through column 6, line 13 and exhibited in figure 2.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Rasmusson and Marchock by specifically providing wherein the speech range is adjustable, taught by Bridges, for the purpose of reducing the occurrence of false speech detection.

Response to Arguments

6. Applicant's arguments filed August 3, 2004 have been fully considered but they are not persuasive. Specifically applicant's argument regarding the limitation "in response to the data from the first party not being substantially all speech data, then determining a silent data threshold has been reached", the above cited rejection more than adequately meets the claimed limitations. In addition, Rasmusson discloses a system for detecting speech and the threshold when "data (i.e. speech)" is detected, thus the silent data threshold is reached when the received data fall below the threshold.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jefferey F Harold whose telephone number is 703-306-5836. The examiner can normally be reached on Monday - Friday 9 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester W Isen can be reached on 703-305-4386. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jefferey F Harold
Examiner
Art Unit 2644

JFH
November 24, 2004